

Cohen, Dippell and Everist, P.C.

Before The
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)	
)	
Office of Engineering and Technology)	ET Docket No. 16-191
Announces Technological Advisory)	
Council (TAC) Noise Floor Technical)	
Inquiry)	

Comments on Behalf of
COHEN, DIPPELL AND EVERIST, P.C.

The following comments are submitted on behalf of Cohen, Dippell and Everist, P.C. (“CDE”) and is in response to the Public Notice released June 15, 2016. CDE and its predecessors have practiced before the Federal Communications Commission (“FCC”) for over 75 years in broadcast and telecommunications matters. The firm or its predecessors have been located in Washington, DC since 1937 and performed professional consulting engineering services to the communication industry.

The undersigned is licensed as a Professional Engineer in the District of Columbia and has been in continuous employment with this firm or its predecessors for over fifty (50) years.

Former And Current Manufacturing

Henry Kissinger indicated that its better to engage in trade with China than engage in military confrontation. According to one business presentation, China makes 80% of the electronic devices that are consumed in the United States. It appears that many of the

components that are the heart of the electronic devices consumed in this country are from only one or two manufacturing sources. One leading industry observer has alleged that there are only one or two world suppliers for TV tuners made for current DTV sets provided for the United States market. It appears that the same may be true for the electronic control mechanism¹ in all household microwave appliances for the United States market.

Therefore, to effectively identify and control noise generated by electronic devices has a far different complexion than posed twenty (20) to thirty (30) years ago. Twenty to thirty years ago many of the electronic devices were manufactured in the United States by a variety of manufacturers and thereby subject to domestic laws. That is not today's reality and hence therein lies the FCC's administrative and legal challenge.

It appears that for the foreseeable future the majority of the electronic devices for United States consumer will be manufactured in off-shore countries. We understand that U.S. customs agency is not in a position to validate that the imported electronic devices does not cause interference. We also understand that most, if not all, U.S. Federal District attorneys are too busy with other legally important cases. The Federal Communications Commission and its field offices becomes the Federal agency of last resort.

However, if the U.S. Customs or the recipient's agent could be enlisted to review and seek out potentially non-compliant electronic RF products would be of great assistance to the FCC in combating non-compliant RF into the United States.

¹An example is the Takata airbag debacle

The undersigned has had experience within importing products (non-RF) from Asia over a number of years. The U.S. customs and the broker (Port of Baltimore) were very diligent that all products were compliant with U.S. Customs requirements and regulations.

Effort To Determine Noise Level From Incidental Radiator

This firm has demonstrated in the filing in this proceeding that described the procedure and effort to perform noise measurements in the outdoor environment adjacent to an operating single circuit 3-phase 345 KV power-line (Hanna-Mansfield) was significant. The noise measurements covered a range of frequencies, AM, FM and VHF-TV. The noise measurements were also taken on discrete frequencies, 0.5, 1.035 and 1.75 MHz and 162 MHz using the then generally accepted noise standards Quasi Peak (ANSI), Quasi Peak (CISPR), Peak (ANSI) and True RMS (ANSI). The effort to conduct these noise measurements in an outdoor environment required prior detailed planning. This included surveying each proposed measurement site as well as the distance to the nearest active conductor.

The Ohio Edison Company staff implemented an additional step—the ability to turn on or take out of service the 345 KV in a short period of time. This permitted the bulk of before and after measurements to be made within a two-hour time-frame, thereby reducing the effect of extraneous and varying environmental noise. The outdoor measurements performed by the then Ohio Edison Company was under actual power-line (345KV) condition and normal load.

The power industry in prior years utilized mathematical models to calculate the approximate noise contribution by a particular power-line configuration and power distribution level. Some of the power companies in order to further estimate the noise contribution by a

power-line configuration would construct test stands which were based on the actual power-line configuration.

This power-line test stand could extend a considerable distance. The limitation of this approach while it provided some actual data was performed without any transmitted conductor current flow, i.e., no load condition

The above represents an example of the ET Docket No. 16-191 Public Notice's description of *Incidental Radiators*.

This firm cannot offer any similar quantitative data on that it has performed on *Unintentional Radiators*. Does *Unintentional Radiators* include devices affecting off-the-air communications such as devices such as wind turbines, passive reflectors, etc?

Recommendation

The FCC, a number of years ago produced a color booklet which provided picture examples of interference for the general public reader to examine and make an assessment. Such a new color booklet could be a useful tool to categorize existing noise sources by the general public. This would help to elicit the general public in the location and resolution of noise. Also, the document should outline a procedure that provides clear information on potential noise sources. An easy method to reporting system needs to be devised. This firm believes that this is one step in which the consumer can make and report a possible noise issue.

The following attempts to address the very salient questions posed in Public Notice².

1. **Is there a noise problem?**

- a. *If so, what are expected major source of noise that are of concern?*

Response: Basically devices that are manufactured that are outside domestic long-standing United States legal system

- b. *What services are being impacted by a rising spectrum noise floor?*

Response: Any receiver consumed by the general public

- c. *If incidental radiators are a concern, what sorts of government, industry, and civil society efforts might be appropriate to ameliorate the noise they produce?*

Response: On November 1, 2016, the Law Firm of Hogan Lovells featured an all-day seminar entitled, “The Internet of Things: The Legal Challenges and Opportunities”. The program featured among other experts³, Stacey Higginbotham, Stacey Knows Things; Jonathan King, Head of Portfolio Management, PA Cloud Systems, Ericsson; John Verdi, Vice President of Policy, Future of Privacy Forum; David Grossman, Senior Legal Advisor, Commission Clyburn’s Office; Adam Thierer, Sr. Research Fellow, Mercatus Center; Julis Brill, Co-Head of Hogan Lovell’s Privacy and Cybersecurity practice and former Commissioner of the Federal Trade Commission. All were favorable to the growth of “Internet of Things” (“IoT”) as being a matter of time that these products will be common place, perhaps within 5 years. If true, the TAC committee’s efforts to begin to identify and address the RF noise issues are timely.

2. **Where does the problem exist?**

- A. *Spectrally*

²DA 16-676 dated June 15, 2016

³Senior staff members from the White House and NTIA and senior executive from Qualcomm

- i. *What frequency bands are of the most interest?*

Response: All bands in which receivers operate and any that affect the general public. It is presumed that the Federal Aviation Administration, Department of Defense, Public Safety and other governmental agencies are prepared to be active participants.

B. *Spatially*

- i. *indoors versus outdoors*

Response: Wherever the general public resides or active in this mobile environment

- ii. *cities versus rural settings.*

Response: Wherever the general public resides or active in the mobile environment.

- iii. *How close in proximity to incidental radiators or other noise sources?*

Response: To the practical distance that is available to current technology and at a distance set by a recognized standard committee

- iv. *How can natural propagation effects be accounted in a noise study?*

Response: Conduct in a narrow time frame before and after observations.

C. *Temporally*

- i. *Night and day?*

Response: Conduct in a narrow time frame before and after observations

- ii. *Seasonally?*

Response: Conduct in a narrow time frame before and after observations

3. **Is there quantitative evidence of the overall increase in the total integrated noise floor across various segments of the radio frequency spectrum?**

- a. *At what levels does the noise floor cause harmful to particular radio services?*

Response: The term harmful interference needs to be defined. Does the question mean objectionable interference?

- b. *What RF environmental data from the past 20 years is available, showing the contribution of major sources of noise?*

Response: Investigation underway

- c. *Please provide reference to scholarly articles or other sources of spectrum noise measurements*

Response: Investigation underway

4. **How should a noise study be performed?**

- a. *What should be the focus of the noise study?*

Response: Enforcement

- b. *How should it be funded?*

Response: Once various stakeholders understand the FCC is serious, voluntary compliance is expected.

- c. *What methods should be used?*

Response: As prescribed by the FCC

- d. *How should noise be measured?*

- i. *What is the optimal instrumentation that should be used?*

Response: Depends on the band

- ii. *What measurement parameters should be used for that instrumentation?*

Response: As prescribed by the FCC

- iii. *At what spatial and temporal scales should noise be measured?*

Response: Unfamiliar with the terms used in the question. Will make inquiry as to the thrust of the question and will, if possibly, respond.

- iv. *Should the monitoring instrumentation be capable of determining the directions of the noise sources? If so, how would those data be used?*

Response: Any useful data should be compiled and examined for usefulness

- v. *Is there an optimal height above ground for measurements?*

Response: None known

- e. What measurement accuracy is needed?

- i. *What are the statistical requirements for sufficient data?*
Good engineering practice. *Would these requirement vary based on spectral, spatial and temporal factors?*

Response: Yes, based on our limited experience

- ii. *Can measurements from uncalibrated, or minimally calibrated, devices be combined?*

Response: No

- iii. *Is it possible to “crowd source” a noise study?*

Response: Doubtful

- f. *Would receiver noise measurements commonly logged by certain users (e.g. radio astronomers, cellular, and broadcast auxiliary licensees) be available and useful for noise floor studies?*

Response: Certainly, if known, should be filed in an open proceeding

- g. *How much data must be collected to reach a conclusion?*

Response: Depends upon how much data scatter.

- h. *How can noise be distinguished from signals?*

Response: Not competent to respond

- i. *Can noise be characterized and its source identified?*

Response: Not competent to respond.

- ii. *Is there a threshold level, below which measurements should be ignored?*

Response: In certain endeavors that is a moving value – such as devices that are described under the broad category, IoT

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Donald G. Everist", written in a cursive style.

Donald G. Everist

Date: November 10, 2016